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ABSTRACT

A project to develop an explicit model of sheltered instruction that teachers can use to improve the academic success of their limited-English-proficient (LEP) students is described, focusing on the development of an observation tool for use in the study. The Sheltered Instruction Observation Protocol (SIOP) provides concrete examples of the features of sheltered instruction that can enhance and expand teachers' instructional practice. In this project, the model was used to train middle school teachers to implement effective sheltered strategies in four large urban school districts. Project teachers used sheltered instruction in a variety of settings, including traditional English-as-a-Second-Language (ESL) classes, content-based ESL classes, and sheltered content classes. The report describes the project and summarizes results. The lesson plan checklist from the SIOP is appended. Contains 15 references. (MSE)

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THE SHELTERED INSTRUCTION OBSERVATION PROTOCOL: A TOOL FOR TEACHER-RESEARCH COLLABORATION AND PROFESSIONAL DEVELOPMENT

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EDUCATIONAL PRACTICE REPORT
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ABSTRACT

Professional development for teachers is a complex and multifaceted endeavor and is becoming more so as popularity grows for standards-based education. Teachers generally report feeling pressure to cover the curriculum at nearly any cost. For English language learners, the cost is greater than usual as teachers often inadvertently pay less attention to the language needs of these students in content courses. The project described in this report was designed with the belief that teacher professional growth can best be fostered through sustained collaborative inquiry between teachers and researchers. It has set out to incorporate what we know about quality professional development with the special features needed to meet the needs of English language learners.

The purpose of the research project was to develop an explicit model of sheltered instruction that teachers could use to improve the academic success of their LEP students. The project has defined a model of sheltered instruction that is based on the research of best practices, as well as on the experiences of participating teachers and researchers who collaborated in developing the observation tool being utilized in the study. The tool, the Sheltered Instruction Observation Protocol (SIOP), provides concrete examples of the features of sheltered instruction that can enhance and expand teachers' instructional practice. In this project, the model was used to train middle school teachers to implement effective sheltered strategies in their classes in four large urban school districts (two on the east coast and two on the west coast). The project teachers use sheltered instruction in a variety of settings, such as traditional English as a second language (ESL) classes, content-based ESL classes, and sheltered content classes. English language learners represent 22-50% of the total population at the project schools, and the proficiency levels of these students range from beginning to advanced.

To date, this project has helped the participating teachers to expand their knowledge base. They have created learning communities in which they can discuss issues of real importance and set the pace for their own professional growth. Through discussion with more capable others, the teachers have had opportunities to increase their understanding of the subject matter–both the content and the language development topics–and they have explored new teaching and assessment strategies. For those untrained in ESL instruction, the project has provided a venue for learning about second language acquisition and for understanding the challenge English language learners face each day as they study multiple subjects through their non-native language.

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INTRODUCTION

In recent years, more than 90% of new immigrants to the United States have arrived from non-English speaking countries. A result of this population shift is a U.S. society that is increasingly more ethnically and linguistically diverse. The impact of this growing diversity is being felt in many areas of public life, as the United States seeks to accommodate these immigrants in their new country. In particular, the U.S. education system is feeling this impact strongly as intensifying numbers of students are entering schools with limited skills in English. The decade between 1985 and 1995 witnessed an increase of 109% in the number of limited English proficient (LEP) students in public schools, while total enrollment in elementary schools rose by only 9.5% (Olsen, 1997). In 1994-95, over 3.1 million school-age children were identified as LEP, approximately 7.3% of the total K-12 public school student population. By the year 2000, it is projected that Hispanics will constitute the largest minority group of pre-K–12 students in the United States and will represent 30% of that population by 2050 (reported in Waggoner, 1999).

While the number of LEP students has grown exponentially across the United States, the academic achievement of these students has continued to lag significantly behind that of their language majority peers. The Improving America's Schools Act (the 1994 reauthorization of the Elementary and Secondary Education Act) has called for all students to meet the same high academic standards, but a recent congressionally-mandated study reported that LEP students receive lower grades, are judged by their teachers to have poorer academic abilities, and score below their classmates on standardized tests of reading and mathematics (Moss & Puma, 1995). In addition, these students have high drop-out rates and are more likely to be placed in lower ability groups and academic tracks than language majority students (Bennici & Strang, 1995; Cummins, 1994).

These findings reflect growing evidence that most schools are not adequately meeting the challenge of educating linguistically and culturally diverse students. In addition to limited English skills, LEP students come from a variety of linguistic, educational, and socioeconomic backgrounds. They differ in their expectations of schooling, the age that they arrived in the United States, and their personal experiences both before and after their arrival. All of these factors have an impact on the academic achievement of these students and influence the type of instruction they need to boost their success in school. To meet the challenge of educating these students well, fundamental adjustments must be made in teacher education, school-based programs, curricula and materials, and instructional and assessment practices. Professional development for capacity building is the key to such change.

Students have difficulty in school for a number of reasons. One contributing factor may be a mismatch between the needs of the students and teacher preparation. Zeichner (1993) and Crawford (1993) find that most teacher preparation colleges do not train undergraduates to work with linguistically and culturally diverse students.The 1993-94 Schools and Staffing Survey (National Center for Education Statistics, 1997) shows that while teachers in regions with higher concentrations of LEP students are more likely to have received some preparation geared to the needs of LEP students, there are many teachers in all parts of the country who have received no preparation at all. Compounding this paucity of teachers being trained to work with LEP students is a shortage of existing teachers qualified to teach this population. McDonnell and Hill (1993) reported significant shortages of teachers qualified to teach LEP students and of bilingual teachers trained to teach in another language.

The National Commission on Teaching and America's Future (NCTAF) (1996) reports that across the United States, 15% of all schools and 23% of urban schools are not able to fill their vacancies with qualified teachers. English as a second language (ESL) and bilingual positions are the most difficult to fill. To compensate, principals hire less qualified teachers, use substitutes, cancel courses, increase class sizes, or ask teachers to teach outside their field of preparation. Thus, many LEP students receive most of their instruction from content area teachers who have not had appropriate professional development to address the needs of second language learners.

The stakes have risen higher for these students in the past few years, as many states have restructured their accountability measures. All states, with the exception of Iowa, have approved or are developing standards for English language arts, mathematics, science, and social studies, and many states expect all students to pass end-of-grade (or in high school, end of course) tests before advancing to subsequent grades or graduating (*Education Week*, 1999, January). In many states, LEP students are given only a 1- or 2-year exemption. What this means for students who enter high school with no English proficiency is that they will be expected to pass tests designed for native English speakers, in mathematics, biology, and other skill areas, after only 2 years. In most cases, the students will not have had the benefit of being taught by teachers who are trained to make content instruction comprehensible to LEP students.

One way that states are trying to address the needs of students learning English as an additional language is through professional development. However, as recent reports have revealed, the traditional models of teacher training—one-shot or short-term workshops or conferences—have been shown to be ineffective (González & Darling-Hammond, 1997; NCTAF, 1996; U.S. Department of Education, 1997). The NCTAF report captures part of the problem:

> **Most professional dollars are spent either reimbursing teachers for courses that may not be directly related to school needs or their classroom responsibilities or for district-determined workshops with even less connections to teachers' own practice. As traditionally organized, in-service education—usually conducted as mass-produced hit-and-run workshops—is not well suited to helping teachers with the most pressing challenges they face in deepening their subject matter knowledge, responding to student diversity, or teaching more effectively. (NCTAF, 1996, pp. 83-4)**

The education profession has begun to move away from the traditional teacher training model to explore more sustained forms of teacher development that involve practicing teachers, teacher candidates, teacher educators, technical assistance providers, researchers, and other educators in collaborative learning communities (see, for example, González & Darling-Hammond, 1997). Some approaches have included extending the bachelor's degree in teaching from 4 to 5 years to allow more intense preparation through school internships, encouraging new teachers to return to special graduate programs, and establishing professional development schools that are university and local school district collaboratives.

Other efforts are underway to create on-site learning communities for practicing teachers in school district settings. "Teachers learn best by studying, doing, and reflecting; by collaborating with other teachers; by looking closely at students and their work; and by sharing what they see." (Darling-Hammond, 1998, p. 8). Darling-Hammond and McLaughlin (1995) suggest professional development strategies that they have found to improve teaching. These include the following:

- Experiential opportunities that engage teachers in actual teaching, assessment, and observation.

- Collaborative endeavors that allow educators to share knowledge among their peers.
- Sustained, intensive development that includes modeling, coaching, and problem-solving.
- Development grounded in research that also draws from teacher experience and inquiry and is connected to the teachers' classes (students and subjects taught).

The project described in this report was designed with the belief that teacher professional growth can be fostered through sustained collaborative inquiry between teachers and researchers. It includes most of the key strategies identified by Darling-Hammond and McLaughlin and has laid the foundation for a teacher network across schools and districts.

THE STUDY ON SHELTERED INSTRUCTION

The purpose of the research project, "The Effects of Sheltered Instruction on the Achievement of Limited English Proficient Students" is to develop an explicit model of sheltered instruction that teachers can implement to improve the academic success of their LEP students. The project has defined a model of sheltered instruction that is based on the research literature of best practices, and on the experiences of the participating teachers and researchers who collaborated in developing the observation tool being utilized in the study. This tool, the Sheltered Instruction Observation Protocol (SIOP), provides concrete examples of the features of sheltered instruction that can enhance and expand teachers' instructional practice (Echevarria, Vogt, & Short, in press). The protocol is composed of 30 items grouped into 3 sections: Preparation, Instruction, and Review/Evaluation. Items are further clustered under Instruction into the following subsections: Building Background, Comprehensible Input, Strategies, Interaction, Practice/Application, and Lesson Delivery. Individual items are scored using a Likert scale with scores ranging from 4 to 0, as shown in figure 1 for item #4 of the Preparation section. For each item, descriptors are listed for scores of 4, 2, and 0 and space is provided for recording comments and specific examples from the observation.

Figure 1: SIOP Sample

PREPARATION

4	2	0	NA
4. Supplementary materials used to a high degree, making the lesson clear and meaningful (graphs, models, visuals)	Some use of supplementary materials	No use of supplementary materials	

Comments:

The model has been used in four large urban school districts (two on the west coast and two on the east coast) to train middle school teachers in implementing effective sheltered strategies in their classes. The project teachers use sheltered instruction in a variety of settings, including traditional ESL classes, content-based ESL classes, and

sheltered content classes. Some of the teachers are trained content specialists, and others are trained ESL specialists. The proficiency levels of the English language learners (ELLs) range from beginning to advanced. ELLs represent 22%-50% of the total student population in the project schools. The predominant native language among these students is Spanish (more than 50% in all districts), with high numbers of Cambodian, Vietnamese, and Korean speakers. Additional languages represented include other Asian, African, Caribbean, European, and Native American languages.

Our work with project teachers commenced in the spring of 1997 and will continue through 2000. A small cohort of teachers collaborated with the researchers to refine the SIOP. This effort included distinguishing between effective strategies for beginning, intermediate, and advanced ELLs; determining "critical" versus "unique" sheltered teaching strategies, the latter being language-modification or support oriented (e.g., slower speech, use of bilingual dictionaries); and field testing the SIOP and providing feedback for making it more user friendly.

The professional development aspect of the project began in earnest in the summer of 1997. At two 3-day professional development institutes (one on the east coast, another on the west coast), these teachers and others who had joined the study explored the project's goals and the observation instrument with the researchers. The teachers also set personal development goals for themselves. The institutes continued with practice on implementing the project's model of sheltered instruction using the SIOP, through demonstration lessons and discussion and analysis of videotaped classroom scenes. The SIOP was recognized both as an observation tool for researchers and teachers to match the implementation of lesson delivery to a model of instruction and, as will be explained in more detail below, as a tool for planning and delivering lessons. Action plans for ongoing interaction among researchers and teachers during the school year were also designed at the summer institutes.

During the 1997-98 school year, we began observing classroom instruction and videotaping the classes of participating teachers. Three videotapes were made of each teacher, one in the fall, winter, and spring. The first videotape, shot early in the fall semester, offers the baseline against which the professional development of each teacher can be measured. In between tapings, teachers were also observed approximately once a month. After each observation, a SIOP was completed on the teacher, and a score was assigned for each of the 30 items and comments recorded when applicable. The researchers shared these analyses with teachers on an ongoing basis, as a means of facilitating teacher growth and validating the research interpretations. SIOP data collected throughout the project will be subsequently analyzed to determine overall teacher change and significant development in specific areas of instructional practice.

During the year, the teachers and researchers met in district-level groups approximately once per month, as well as twice in reunion workshops with the project teachers from each coast. The purpose of these meetings was to discuss topics related to the research agenda, refine the sheltered instruction model, review and discuss videotaped lessons, and provide constructive feedback to help improve instruction. The nature of these meetings was quite collaborative. The teachers began to ask practical questions of one another and of the researchers that were directly related to the teaching and learning that goes on in their classes. These questions covered such topics as how to bring students back together after a cooperative learning science activity, how to conduct a simulation in a history class, and how to differentiate instruction for students at different English proficiency levels in the same class. These are the types of question-and-answer sessions that the NCTAF report encourages, because they are "linked to concrete problems of practice" (NCTAF, 1996, p. 41).

In the summer of 1998, additional teachers joined the study, and these larger groups on both coasts again participated in summer institutes. Some of the teachers from the first cohort co-presented with the researchers at these sessions. The schedule for the 1998-99 school year was similar to the previous one, although the east coast teachers chose not to meet monthly in district-level groups. They preferred three reunions during the year, citing the value of cross-district collaboration. Closed listserv discussions took place among these teachers and researchers in between times. As one east coast teacher said during the final reunion meeting for the year, "with the listserv, I've enjoyed it. Usually I hate email and sitting down or having my husband print out messages for me, but I've gotten into it, seeing the things people write back and forth."

While the teachers make the sheltered instruction model part of their regular classroom practice, the researchers are also gathering data over several years to evaluate student progress. The data include grades, promotion through the ESL programs, attendance, and a writing assessment measure. Unfortunately, many of the ESL students are exempted from standardized testing, making scores on those measures unavailable. We are videotaping and collecting data from control classrooms as well. Through analyses, our goal is to determine whether students receiving high-quality sheltered instruction differ significantly from their peers in non-sheltered or lower-quality sheltered instruction in their content and language achievement.

PRELIMINARY FINDINGS ON TEACHER CHANGE

After the first 2 years of working with the teachers, we were able to identify certain areas of growth. These included the teachers' use of the observation tool for lesson planning, self-monitoring, and reflection; their small but growing awareness of how language can be part of content classes and ways in which it can be naturally integrated; an understanding of effective instruction and ways to determine if students are learning; and their recognition that change takes time and is facilitated by more capable others—both colleagues and researchers.

Using the SIOP for Lesson Planning and Reflection

The SIOP as described earlier was initially designed as an observation and rating tool for the researchers to use while observing classroom instruction. From the beginning of the study, we shared this tool with the teachers and solicited their input. We asked them to evaluate the categories and individual items for importance and application to their classes. The teachers made several suggestions about items to eliminate, combine, or add. It was during the first monthly meeting in one east coast district that the teachers explored the possibility of using the SIOP as a lesson planning tool. "If you are going to use that to observe us," one teacher said, "then maybe we should use it to plan lessons." A similar situation occurred on the west coast that fall when a district group was discussing the use of the SIOP for rating lessons. There a teacher commented that, "It may even be more useful for planning." He went on to tell the group that, after writing his lesson plans, he compared them to the SIOP and made sure he had planned to cover all the components. These examples demonstrate teachers taking charge of their own professional growth. As a result of those comments and the assent of the other teachers, we modified the SIOP items into a checklist (see appendix), listing the most positive descriptor from the Likert scale for each item as a declarative statement. For instance, the category of Building Background, item 7 on the checklist reads: "Explicitly link concepts to students' backgrounds and experiences."

At the beginning of the 1997-98 school year, the teachers also selected one of the categories on the SIOP as a personal goal for improvement. One teacher, Ms. Clark* wrote:

> I am interested in this project because I am relatively new to teaching English as a Second Language and I believe that I can benefit a lot by participating in this project. I have a lot to learn and a lot to build on or improve on what I know. I feel that I am starting from ground zero and so it has been somewhat difficult for me to decide on a professional development goal. That is, I feel almost compelled to work on everything simultaneously. Having said that, common sense prevails and I have decided to make "preparation" my professional development goal for this year. This, I think is a good choice given the makeup of my class. They are beginners, but they range from no or low competency to high competency within the beginner level. I feel that I can benefit most by improving on the preparation of my lessons to met the needs of all my students.

As we observed her first lesson, we noticed that the lesson plan did not allow much time for student talk or for students to practice the information presented. The interaction was teacher-dominated with students called upon primarily to provide brief, factual responses. The grouping pattern was whole class for the entire lesson, which diminished opportunities for the more proficient students to support less proficient students and for oral language practice. After the first observation, this teacher responded to our feedback on the SIOP and focused on the timing and delivery of her lesson:

> I am working on pacing. I have a 6th grade class and the 7th/8th grade class that you observed. The sixth graders are much more language proficient and knowledgeable than the 7th/8th graders. I often times realize during or after a lesson that I have to go at a slower pace for the 7th/8th graders, or that I should have used an entirely different approach with them. These are the dimensions I think I have to have in the forefront when I am preparing lessons.

As Darling-Hammond (1998) has explained, reflection provides teachers with a powerful tool for improving their instruction. By thinking about her lesson plans and about her individual students' responses to the lessons, this teacher was able to identify areas for her own personal growth.

At the reunion meeting held in March 1998, Ms. Clark informed us that:

> I've been using this as a personal thing. I think I've been benefiting. Now I want to move on. I think I've done well with my goal, and I want to choose another goal. I sit down with the SIOP as I plan my lessons, and see I've done well with pacing.

Our observations of Ms. Clark's classroom and a review of her videotaped lessons that year revealed that her preparation skills had improved. She was better able to accommodate the different proficiency levels of her beginning students. She had incorporated small group and pair activities along with whole class discussions and individual work (e.g., silent reading) and designed lessons that allowed more time for students to practice their oral language and apply the information they were studying.

Another teacher, Ms. Gately, explained that she does not use the SIOP checklist point by point but keeps it in mind when planning lessons and refers to it from time to time. She has decided, however, that she wants feedback on her lessons before our observations. Before each scheduled visit, she emails her lesson plan to us for review and comment. She describes her objectives, which include language and content ones as well as thinking/process objectives, and then details the activities she has planned. This pre-visit interaction gives us an opportunity to make suggestions, refer her to ideas

* All teacher names in this paper are pseudonyms.

embedded in the SIOP (like the use of scaffolding or learning strategies), and answer questions she may have (e.g., What shall I do for review?). At one point in the fall 1997 semester, she wrote at the end of her message:

> **WHEW. This process has taken me a couple of hours today. For real. I've thoroughly enjoyed it, but we both know that this kind of detail is impossible for five lessons (OK, three) every single day. Is there a short form? Maybe it just becomes second nature after doing it like this two or three hundred times. I really want to improve my planning skills and this is really helping, so thanks for bearing with me!**

Besides using the SIOP for lesson planning purposes, it has been a valuable instrument for providing feedback to teachers and focusing their self-reflection. Often as we share video clips of the taped lessons, we ask teachers to watch the lesson, or a portion of it, in light of a few selected SIOP categories. We then discuss whether or not the videotaped teacher accomplished those items and how. If the teacher was not successful in accomplishing those items, we generate ideas for modifying the lesson.

The east coast teachers decided they would like feedback on observed lessons through email exchanges. In this way, the researchers and teachers could maintain an ongoing dialogue about the lessons and the project in general. Therefore, after the observed lessons, we prepare and send comments according to the SIOP categories. We discuss our interpretation of the lessons in light of the categories and, where appropriate, make suggestions for future lessons. The teachers in turn respond with their explanations, sometimes agreeing with our ideas and sometimes explaining why they included or omitted a particular task in relation to the entire unit they were presenting to the students. When asked to evaluate the email feedback, Ms. Linowitz wrote at the end of her first year in the project, "The detail in the write-ups is excellent. I did find it helpful and feel that as much constructive criticism as possible can only help me grow professionally."

As researchers, we are aware that by observing the teachers approximately once a month, it is possible to get an accurate picture of the teaching and learning process that goes on in their classrooms over the course of a year. Any one lesson, however, is always viewed in isolation. Through the email dialogue, teachers explain what happened the day before, as well as what is planned for the following day. That helps to round out our interpretation of each lesson. It also ensures that the collaborative relationship we have established with the teachers is maintained. We provide our comments and suggestions, and we hear and reflect on their responses and adjust our ratings accordingly.

Implementing Language Objectives in Content Lessons

Incorporating language objectives in the sheltered content lessons has been challenging for most of the teachers participating in the study, although for different reasons. The west coast teachers who are trained content specialists do not easily recognize language learning opportunities. If anything, they concentrate on vocabulary development. We expected that the east coast teachers, most of whom are trained ESL specialists, would incorporate language much more readily. However, they found themselves struggling to learn the content they needed to teach, and in the first year (1997-98), they often lost track of the language learning possibilities.

Many of the ESL-trained teachers are required to teach several different subjects, some of which they are not certified to teach. They find the preparation very time-consuming, especially the less experienced teachers. One teacher pointed out, "If I may speak for all of us, we just keep one step ahead of the students." Teachers in one

district explained that the in-service workshops they have received on using their district sheltered science curriculum have not paid attention to the language issues. Rather, the training has focused on understanding how to use the equipment and general concepts upon which the science topics are based.

The teachers continually reflected on the language aspect of the SIOP model, individually and in the monthly and reunion meetings. In response to feedback on a lesson, one teacher, Ms. Hughes, wrote in early 1998:

> **Overall I have to agree with everything you said, though I don't know if it's reasonable to expect that one can fit all four language skills AND content skills into one lesson. One beautifully-crafted 90-minute lesson perhaps, but not likely in a 45-minute span. Within a 3- or 4-day span, certainly....I agree that I need to integrate content and language objectives more effectively. I seem to be fairly adept at doing one or the other, switching back and forth on a regular basis, but the integration of both is something for me to work on....**

Comments such as this have helped us as researchers to see the time constraints placed on the teachers, as well as the pressures of their multiple-subject schedules. These comments also reveal that integrating language is a complicated process that was perhaps not well understood. In our monthly meetings, we periodically explored what language objectives could be, and how they could fit into content lessons. Besides the obvious inclusion of key vocabulary or grammar points, the teachers shared with one another ways to add language skills, like reading comprehension strategies or process writing. In addition, we discussed ways to increase oral interaction opportunities that allowed students to use language for functional purposes, such as negotiating meaning, justifying opinions, making hypotheses, and so on. We also talked about what a lesson is and whether 45 or 50 minutes constitute the cutoff point for a lesson. As a group, we agreed that lessons might take place over several days, and that language activities might not occur (or not for all four language skills) each day but should for each multiday lesson or unit. One teacher observed that language objectives may vary more in type and quantity for advanced students than for beginning students.

Teachers also took charge of how they incorporated language into their lessons, based on their interests, student needs, and lesson content. One teacher, Ms. Dawson, taught both language arts and science to her beginning-level students. As a result, she preferred to plan interdisciplinary lessons where the language piece was emphasized during the language arts class. For example, when studying simple machines in science, she had the students invent a machine in language arts and write about its attributes. This allowed the students to include technical vocabulary and concepts they learned in the science class.

Ms. Gately looked for opportunities to model good language and develop students' oral presentation skills. In a social studies lesson on the Westward Movement, she asked students to prepare a speech from the point of view of the farmers or the Native Americans. First, students were asked to memorize and deliver an historical speech drawn from primary sources that represented one of these groups, and then they were asked to write their own. The students' own speeches were very similar to the historical speeches they had memorized. This fact disturbed the teacher at first until she realized that the historical speeches were the only models she had provided for the students. In response, she helped the students draft what they thought they might have said had they been present at the historical event under study, and then modeled these speeches. She also gave them an outline of topics to cover in their speeches, as well as a rubric that would be used for grading the speech when delivered.

In the 1997-98 school year, Ms. Hughes decided to set aside one day per week to focus on the language objectives that were tied to the content. Sometimes she did vocabulary development, and at other times she focused on writing activities or reading. One of her students asked, "Why are we doing English in science?" After trying this routine for several months, Ms. Hughes decided she was not comfortable with this approach. "It feels artificial to me," she explained. She was still questioning whether language objectives must be included in a sheltered lesson to be considered effective. This was an area of further exploration and reflection for her and for us. In the second year, she tried to infuse language into the content lessons more regularly and wrote, "I'm much more aware of how language is married to content and the importance of capitalizing on that." By the end of the 1998-99 school year, Ms. Gately, however, had become more skilled at incorporating objectives. She explained, "I'm now very habitual about writing them [the lesson's objectives] on the board. (I would feel very uncomfortable now if they weren't there—like the seatbelt in my car) . . ."

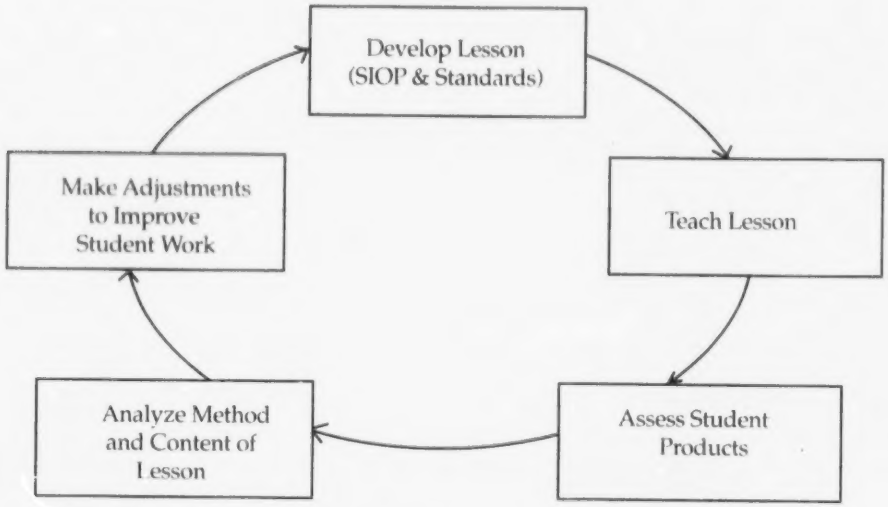
Assessing Student Comprehension

During the 1997-98 school year, teachers gained confidence and facility in implementing the features of the model. A new challenge was raised at the end of the year and extended into the next year: "How does a teacher know that the students got it?" The teachers and researchers approached this issue of student comprehension in two ways: (1) During the lesson, teachers tried to determine whether students understood the information, tasks, and activities (review/evaluation of student knowledge is a category on the SIOP, and so answering this comprehension question was in keeping with the model); and (2) during monthly meetings, teachers explored how students' level of comprehension, as reflected in their work, could inform teacher planning.

Videotape analysis was used to ascertain student comprehension during the lesson. In some of the monthly work groups, a teacher would introduce the lesson by providing background on the students, how the lesson fit into the overall curriculum, and the goals for the lesson. Using the SIOP, participants watched the videotaped lesson, paying particular attention to student engagement levels, types of student questions, and student behaviors. This process proved quite helpful, especially because the camera provided an objective eye with which to view the students. It became apparent when students were lost during the lesson. The group discussed ways that the teacher could have made the message clearer for the students, such as writing the instructions in steps on the overhead rather than explaining them orally. This simple adjustment to the lesson would have given students visual clues to aid their comprehension while the assignment was being explained, as well as a reference point throughout the lesson when they were unclear of what to do next.

Student comprehension of the lesson was also analyzed through work samples. One issue in teaching English language learners is distinguishing between what students learn from a lesson or assignment and how well they are able to express their level of understanding, given their limited English language skills. In this project, the group examined student work completed during the videotaped lesson, or completed subsequent to the lesson. The researchers emphasized that it is not enough to simply deliver a lesson; students must learn from the process. Discussions in the west coast meetings shifted from simply rating the lessons using the SIOP, to rating a lesson and then analyzing student work samples. The results informed which modifications needed to be made in later lessons. When time permitted, the process outlined in Figure 2 was followed. Teachers worked with a partner to plan subsequent lessons, incorporating suggestions for enhancing student comprehension.

Figure 2: Improving Achievement of LEP Students



The following case illustrates the process. Researchers videotaped Ms. Schumaker's lesson that reviewed Africa's geographic regions, and she brought student tests on the unit to the work group. The group first rated the videotaped lesson using the SIOP and the teacher received high marks on most items, deeming it a high quality sheltered lesson. Next the group analyzed the test for elements that might be problematic, indicating questions that lacked clarity or might yield unexpected responses, for example. Finally, the group examined the variation in individual student performance on the test. The analysis revealed that several of the students' performance difficulties were caused by the teacher.

First, the teacher admitted she had made the assumption that the students comprehended easily the first portion of the test, a set of slides of Africa that she had shown. She thought that because the slides were visual media, student comprehension would be high. However, students consistently performed poorly on the five slide identification test questions. The teacher recognized that she would need to teach that section of the unit differently the next time.

Second, the group concluded that the test would require more time to complete than had been allotted (i.e., one period), given the amount of energy an English language learner expends during a test, concentrating on both the language and content. After the slide identification portion, students faced 20 multiple choice and fill-in-the-blank questions and had to respond to an essay question. The group agreed that when tests have essay questions, other types of questions should be limited to allow adequate time for conceptualizing and composing the essay.

In addition, the essay question was complicated, embedding a lot of information for students to keep in mind. The question is provided below:

> **Choose 1 of the geographic areas of Africa and pretend you live there. How does the geography of the area, the climate, the weather, and the natural resources that are available to you affect the way you live? Describe in a letter to a friend how you dress, the type of shelter you have, the food you eat, your lifestyle, etc. Be as detailed as you can.**

In one respect, this type of question was a good choice by the teacher, because students are required to respond to questions like these as part of the district's standardized testing policy. However, the group felt that the practice assignment, shown in Figure 3, should have been given prior to the test. (That had been the teacher's intent, but the class time had elapsed the previous day.) Another idea was to emphasize the test essay phrase "write a letter to a friend" in some way (e.g., bolded, set as a title). Few students used a friendly letter format on the test.

Figure 3: Practice Assignment

Writing Assignment For Geography of Africa

Assignment: To write a letter to a friend that describes the area you live in and explains HOW you have adapted to the geography of the area.

- Use the LEFT side of your notebook

Directions:

1) Choose 1 geographic feature.
2) Make a cluster of ideas about how you have adapted to the geography of this area. Include:
    a.) clothing
    b.) shelter
    c.) food (do you plant crops, or do you hunt and gather?)
    d.) lifestyle (are you a nomad, or do you live in a village?)
3) Describe the geography of the area you live in.
4) Write a letter to a friend using the information in your cluster. Use as many details and descriptive words as possible.

By examining their teaching and assignments, the teachers became more aware of ways to meet students' linguistic needs and to facilitate their learning.

TEACHER CHANGE TAKES TIME AND REQUIRES COLLABORATION

It was the original aim of the project to train a cohort of teachers the first year, follow their students' achievement, and begin training a new cohort of teachers the second year. However, we soon realized that changes in teaching do not take place easily or quickly, even with sustained involvement throughout a school year and summer. Learning and implementing the model is an ongoing process. Many teachers struggled with some of the issues we discussed previously, such as focusing on both language and content objectives. Other teachers, despite some experience working with English language learners, did not have a sophisticated understanding of the needs of students going through the second language acquisition process. Their professional training was in a content area, not ESL. It took significant time for those teachers to understand that ELLs require significant amounts of comprehensible input, as well as curricular modifications.

Teachers reported that initially, rather than implementing major components of the model, they isolated certain items within the model, such as slowing their presentation of material and using more visual clues, and focused their attention only on those features. At the beginning, this approach was useful for several teachers but certainly

slowed the process of practicing and perfecting the entire model. However, the model was enhanced and facilitated through collaboration. Teachers spoke highly of the benefit of working within a group, whether at the monthly meetings, the school site, or the summer institutes. A number of teachers particularly enjoyed the opportunity for cross-district collaboration.

The monthly meetings provided ongoing, positive support for the teachers, as the following exchange between two relatively new teachers captures. Ms. Taurus was in her second year of teaching and Ms. Olsen in her third. For both, it was their first year in the research project.

Taurus: **After we came here and started beginning to feel comfortable and opening up and sharing and all that stuff, it got a lot better, a lot more meaningful to me. I know, because that's where I get ideas. Somebody says something, and I think, Oh, I ought to try that. Then you branch off into other areas with it. That's great.**

Olsen: **Or Mitchell will say something and I'm like, Oh! That's true too, you know. And you don't have your narrow view of things. You're trying to be open-minded, but you don't know what else there is there. So if we could talk about it and maybe write down what we thought from the discussion, just more of a reflection on the day we had.**

Taurus: **And it's not just because we are the ELD [English language development] teachers, we are new teachers. And, gosh, everyday I learn something new. Whether it's from Mitch, who's had a lot of experience, or from Karen, who's had a lot of experience working with ELD kids. That helps us a lot, because we're new at this. This is a brand new ball game.**

New and veteran teachers alike reported that participation in the monthly meetings was very beneficial. It provided them with an opportunity to observe their colleagues' classroom practice, to discuss their successes and challenges, and to plan lessons. More than anything, it created a support network. As one teacher wrote on the year-end evaluation, "I like the longer reunion meetings—the cross-pollination is good, and the longer time helps us go more in depth."

Ms. Gately, for example, does not only rely on the researchers to provide feedback and generate ideas for her lessons. Three other project teachers work in the same building, and she explained that she frequently seeks them out for informal chats in the hallways. She will share a lesson or activity concept and get their reactions or even share a positive experience that has happened in her class during a particular lesson. This demonstrates that the learning community these teachers have established in the school is beneficial to Ms. Gately's professional development.

The summer institutes provided a slightly different kind of support. Participants included teachers from four different schools in three separate districts on the west coast and five schools in two districts on the east coast. On numerous occasions, participants mentioned the advantages of having access to teachers from other geographic areas and school sites. The interaction with a variety of teachers was beneficial in several ways. It provided a sense of camaraderie, validating some of their struggles. Because there is a certain isolation inherent in teaching, the participants reported that hearing how others grappled with very similar challenges eased their burden. Another benefit was that they gained valuable ideas that went beyond the expertise of their school alone. Because each school has its own culture and way of doing things, cross-school and cross-district collaboration was invigorating. Finally, it

expanded their views of the issues and challenges they face every day. The teachers were able to cast their English language learners in a light that recognized the changing demographics nationwide. They began to feel part of a larger cause to educate all students in the United States and were committed to improving their students' academic success.

CONCLUSIONS

Professional development for teachers is a complex and multifaceted endeavor, and it is becoming more so as popularity grows for standards-based education. Teachers generally report feeling pressure to cover the curriculum at nearly any cost. For ELLs, the cost is greater than usual; teachers inadvertently ignore the language needs of these students within content courses. Our project has set out to incorporate what we know about quality professional development with the special features needed to meet the needs of English language learners.

Darling-Hammond (1998, p. 7-8) has reviewed the kinds of knowledge teachers need to prepare students for standards-based instruction:

- Teachers need to understand the subject matter deeply and flexibly.
- Teachers need to know about learning (teaching strategies, decision-making strategies about the content to cover and the best way to do so, assessment strategies, language acquisition theory).
- Teachers need to know about curriculum resources and technologies.
- Teachers need to know about collaboration—their collaboration with other teachers, students collaborating together, and collaboration with parents.
- Teachers need to be able to analyze and reflect on their practice, to assess the effects of their teaching, and to refine and improve their instruction.

To date, this project has helped teachers expand their knowledge base in several of these areas. Through discussion with more capable others, the teachers have had opportunities to increase their understanding of the subject matter—both the content and the language development topics—and likewise they have explored new teaching and assessment strategies. For those untrained in ESL, the project has provided a venue for learning about second language acquisition and for understanding the challenge English language learners face each day as they study multiple subjects through their non-native language.

The current structure of schools and district-led professional development provide relatively few teachers with the opportunity to reflect on and analyze their instruction and the work of their students to the degree that we have done in the project. There is rarely any occasion when teachers can come together and collaborate on the teaching and learning process, certainly none that are sustained over time. The teachers who participated in this study have created learning communities in which they can discuss issues of real importance and set the pace for their own professional growth.

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Appendix

Lesson Plan Checklist for

The Sheltered Instruction Observation Protocol (SIOP)

I. Preparation

1. Write content objectives clearly for students.
2. Write language objectives clearly for students.
3. Choose content concepts appropriate for age and educational background level of students.
   List them:
4. Identify supplementary materials to use (graphs, models, visuals).
   List materials:
5. Adapt content (e.g., text, assignment) to all levels of student proficiency.
   List ideas for adaptation:
6. Plan meaningful activities that integrate lesson concepts (e.g., surveys, letter writing, simulations, constructing models) with language practice opportunities for reading, writing, listening, and/or speaking.
   List them:

II. Instruction

Building Background

7. Explicitly link concepts to students' backgrounds and experiences.
   Examples:
8. Explicitly link past learning and new concepts.
   Examples:
9. Emphasize key vocabulary (e.g., introduce, write, repeat, and highlight) for students.
   List key vocabulary:

Comprehensible Input

10. Use speech appropriate for students' proficiency level (e.g., slower rate, enunciation, and simple sentence structure for beginners).
11. Explain academic tasks clearly.
12. Use a variety of techniques to make content concepts clear (e.g., modeling, visuals, hands-on activities, demonstrations, gestures, body language).
    List them:

Strategies

13. Provide ample opportunities for students to use strategies (e.g., problem solving, predicting, organizing, summarizing, categorizing, evaluating, self-monitoring).
    List them:

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14. Use scaffolding techniques consistently (providing the right amount of support to move students from one level of understanding to a higher level) throughout lesson.
List them:

15. Use a variety of question types including those that promote higher-order thinking skills throughout the lesson (e.g., literal, analytical, and interpretive questions).
List them:

Interaction

16. Provide frequent opportunities for interaction and discussion between teacher/student and among students about lessons concepts, and encourage elaborated responses.

17. Use group configurations that support language and content objectives of the lesson.
List the grouping types:

18. Provide sufficient wait time for student responses consistently.

19. Give ample opportunities for students to clarify key concepts in L1 as needed with aide, peer, or L1 text.

Practice/Application

20. Provide hands-on materials and/or manipulatives for students to practice using new content knowledge.
List materials:

21. Provide activities for students to apply content and language knowledge in the classroom.
List them:

22. Provide activities that integrate all language skills (i.e., reading, writing, listening, and speaking).
List them:

Lesson Delivery

23. Support content objectives clearly.

24. Support language objectives clearly.

25. Engage students approximately 90-100% of the period (most students taking part and on task throughout the lesson).

26. Pace the lesson appropriately to the students' ability level.

III. Review/Evaluation

27. Give a comprehensive review of key vocabulary.

28. Give a comprehensive review of key content concepts.

29. Provide feedback to students regularly on their output (e.g., language, content, work).

30. Conduct assessments of student comprehension and learning throughout lesson on all lesson objectives (e.g., spot checking, group response).

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